

## Global pattern of gene flow in plant species along altitudinal gradients on mountains

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Several studies on mountain plants with wide-altitudinal distributions have found significant genetic differentiation and structuring among populations along altitudinal gradients. In most of the studies, however, the level of genetic differentiation was not highly remarkable. This is somewhat counterintuitive, since one would expect that mountainous species often exhibit heterogeneous environments and phenological differences along altitudinal gradients, which should be forces driving genetic differentiation. Understanding how gene flow corresponds with altitudinal gradients can inform process of the genetic structuring. I reviewed published studies to categorize global patterns of gene flow in mountainous plant species. These outcomes can depend on 1) isolation by distance, 2) mobility within similar altitudes, and 3) mobility among dissimilar altitudes, and imply evolutionary processes of the plant populations on mountains.

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